

Future priorities for the IARC Monographs

An Advisory Group of 21 scientists from 13 countries met in April, 2014, to recommend topics for assessment in 2015–19 and to discuss strategic matters for the International Agency for

Research on Cancer (IARC) Monographs programme. IARC periodically convenes such advisory groups to ensure that the Monographs reflect the current state of priorities for public health.

The Advisory Group assessed the responses to a call for nominations on the IARC website and recommended a broad range of agents and exposures for assessment with high or medium



Panel: Agents recommended by the IARC Advisory Group for assessment

High priority

Acrylamide, furan, and 5-(hydroxymethyl) furfural—commonly found in cooked foods; cancer bioassay data are available
 Aspartame and sucralose—widespread use and concern about their potential carcinogenicity
 Beta-carotene—chemoprevention trials provide data on cancer incidence in high-risk groups (cigarette smokers and asbestos-exposed workers) who were exposed to high doses
 Bisphenol A—widely used in epoxy resins and plastics; ongoing cancer bioassays of perinatal exposure
 Coffee—numerous case-control and cohort studies have been published since the IARC Monograph
 Dimethylformamide—widespread contamination in air and water; new cancer bioassay and epidemiological data are available
 Disinfected water used for showering, bathing, swimming, or drinking—ubiquitous exposure; extensive new mechanistic evidence of specific disinfection by-products, including molecular epidemiology studies, has been published
 Ethyl acrylate—new mechanistic studies were published after the previous assessment
 Human cytomegalovirus—herpes virus ubiquitous worldwide; recent human studies suggest potential role in glioblastoma
 Indium-tin oxide—used in production of liquid crystal displays (LCDs) and touch screens; new cancer bioassay and mechanistic data
 Iron (in food and as supplements)—daily iron intake exceeds recommended levels in many women; epidemiological studies of haem iron intake and colon and other cancers are available
 Mate drinking—new epidemiological studies suggest an association with oesophageal squamous cell carcinoma
 Methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), and tert-butyl alcohol—widespread exposure due to use of MTBE and ETBE as fuel additives; cancer bioassay data are available
 Multi-walled carbon nanotubes—cancer bioassay data are available from intraperitoneal injection studies, inhalation studies are ongoing; mechanistic similarities with asbestos have been noted
 Nicotine—increasing population exposure via electronic nicotine delivery systems; recent mechanistic data suggest an association with DNA damage and other pathways of carcinogenesis
 Obesity and being overweight—high and increasing prevalence; many epidemiological studies of several cancer types are available
 Phenyl and octyl tin compounds—used as antifouling agents; new cancer bioassay data are available
 Physical inactivity and sedentary work—long-term trends of decrease in physical activity, epidemiological studies of physical activity and sedentary work
 Opium—addictive narcotic drug; epidemiological studies of several human cancers
 Pesticides (including carbaryl, diazinon, lindane, malathion, pendimethalin, and permethrin)—current or former widespread global use; substantial data from new epidemiological studies and recent high throughput screening
 Processed and unprocessed red meat—consumed worldwide; several epidemiological studies of colorectal and some other cancers
 Shift work that involves circadian disruption—several new epidemiological studies, including ongoing studies with more detailed information on exposure and cancer outcomes, and extensive new mechanistic data have been published
 Styrene—new epidemiological studies and extended follow-up planned; many new mechanistic studies are available
 Welding—common workplace exposure; many new epidemiological and mechanistic studies are available and Volume-100D reported an association with ocular melanoma
 Agents recently tested in cancer bioassays—new bioassay data for several widely used chemicals have been published (including 2-amino-4-chlorophenol, 1-bromopropane, 3-chloro-2-methylpropene, 2-chloronitrobenzene, 4-chloronitrobenzene, 1,4-dichloro-2-nitrobenzene, 2,4-dichloro-1-nitrobenzene, N,N-dimethyl-p-toluidine, isobutyl nitrite, 2-mercaptobenzo-thiazole [MBT], ortho-phenylenediamine dihydrochloride, tetrabromobisphenol A, and tungsten)

Medium priority

Acrolein; breast implants; calcium channel blockers; coal dust; hydrazine; lead; metal working fluids; methanol; metronidazole; beta-myrcene; other pesticides (including atrazine, chlorpyrifos, DDT, S-ethyl-N,N-dipropylthiocarbamate [EPTC], fonofos, glyphosate, pentachlorophenol and 2,4,6-trichlorophenol, terbufos), beta-picoline; riddelliine; *Salmonella typhi* and *paratyphi* (chronic infection); salt; stress; talc; trimethylolpropane triacrylate; zidovudine; agents in ongoing cancer bioassays (allyl chloride, anthracene, and N,N-dimethylacetamide)

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Upcoming meetings

June 3–10, 2014, Volume 110:

Perfluoro-octanoic acid, tetrafluoroethylene, dichloromethane, 1,2-dichloropropane, and 1,3-propane sultone

September 30–October 7, 2014,

Volume 111: Some nanomaterials and some fibres

March 3–10, 2015, Volume 112:

Some pesticides and related chemicals

For more on the IARC

Monographs see <http://monographs.iarc.fr/>

IARC Monographs Advisory Group Members

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Invited Specialists

None

Representatives

R Johnson (USA)

Observers

None

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Declaration of interests
HV is on the board of directors of Alko, a wholly government-owned alcohol retail monopoly in Finland, under the jurisdiction of the Ministry for Social Affairs and Health.

priority (panel); IARC will use this advice when selecting agents for future assessments.

Additionally, the Advisory Group endorsed the current system of expert reviews with strict management of conflicts of interests, and encouraged the Secretariat to explore the use of systematic review tools to further increase transparency and efficiency. The group also supported recommendations by another Advisory Group on Quantitative Risk Characterization to progressively include exposure-response associations in the Monographs, particularly from epidemiological studies, as a basis for estimates of global cancer burden

by IARC. The need for systematic identification of mechanistic data with transparent selection of publications was recognised, in order to clarify mechanistic processes. This work would increasingly require future Monograph Working Groups to analyse and appropriately present high-throughput and high-content data streams, including instances where the information is maintained in public databases rather than peer-reviewed publications.

The Advisory Group also recommended exploration of additional opportunities to address cancer risk within low-income and medium-income countries. These opportunities

could include enhanced retrieval of relevant exposure data for Monographs and increased dissemination of pertinent evaluations to stakeholders in these countries, and more generally to the scientific and technical community, policy makers, and the public.

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We declare that we have no competing interests.